provide substantially additional power for increasing the range of the electric vehicle **100**.

[0020] In the example of FIG. **1**A, the auxiliary battery module **102** is configured to have a height and width approximately the same as the height and width of the cargo area **112**, e.g., about 15-20 inches deep by about 48-60 inches wide, for instance, and a depth in the lengthwise direction of about 12-24 inches, for instance. This configuration permits a substantial portion of the cargo area **112** to remain available for other cargo. These dimensions are merely exemplary, and other dimensions may be used.

[0021] As shown in FIGS. **1**A-**1**C, the exemplary auxiliary battery module **102** includes a battery housing **103** and a first electrical connector **120** mounted to the housing **103**, and the electric vehicle **100** includes a second electrical connector **122** mounted to a forward sidewall of the cargo area **112**, wherein the second electrical connector **122** mates with the first electrical connector **120** such that the auxiliary battery module **102** can provide electrical power to the electric motor(s) that propel the electric vehicle **102**. In other words, both the primary battery of the electric vehicle **100** and the auxiliary battery module **102** can provide power to the electric motor(s) of the vehicle powertrain to propel the electric vehicle **100**. In this regard, and as will be discussed in further detail below, the electrical connectors **120** and **122** include high-voltage connections **120***a*, **120***b* and **122***a*, **122***b*, respectively, that permit the auxiliary battery module **102** to be electrically connected in parallel with the vehicle's primary battery and may include one or more low-voltage connections **120***c* and **122***c*, respectively, to provide electrical connection to sensors and electrical circuitry for monitoring and control associated with operation of the auxiliary battery module **102** when attached to the electric vehicle **100**.

[0022] The auxiliary battery module **102** can be configured to be positioned in the cargo area **112** of the electric vehicle **100** while supplying electric power to the motor(s) that propel the electric vehicle, and can be configured to be removable from and reattachable to the electric vehicle **100**. In this regard, as shown in FIGS. **1**A-**1**C, protruding support portions **121** (support members) that protrude laterally at a top side of the auxiliary battery module **102** may be placed on corresponding recessed portions **123** of the vehicle side members **116** to support the auxiliary battery module **102**. For example, the auxiliary battery module **102** may be lowered onto the electric vehicle **100** via a winch with a cable and hooks that can hook onto grab areas **142** shown in FIG. **1**C, or the auxiliary battery module **102** may be lowered with a winch that includes cables attached to threaded eye-bolts which may be screwed into holes **134** of the auxiliary battery module **102** in examples where those holes **134** are threaded. Alternatively, the auxiliary battery module may include bottom cutout portions in the battery housing **103** to accommodate forks of a forklift so that the auxiliary battery module **102** can lifted with a forklift and lowered onto the electric vehicle **100**. Once the auxiliary battery module **102** is in proper position, fasteners such as threaded bolts may be placed through holes **134** of the auxiliary battery module **102** and fastened into receptacles such as threaded holes **132** located at the recessed portions **123** of the side members **116** to secure the auxiliary battery module **102** to the electric vehicle **100**. Other latching mechanisms other than threaded bolts may be used to secure the auxiliary battery module **102**, such as, for example, over-center latches with locks, tab-in-slot latching mechanisms (e.g., similar to seat belt/safety belt locking mechanisms), and electromechanical automatic cinching latches such as commonly used on vehicle door locks provided they are constructed using suitable strength/gauge materials to accommodate the weight of the auxiliary battery module **102**, which may be several hundred pounds or more. Of course, the side members **116** and/or other support members of the electric vehicle **100** to which the auxiliary battery module **102** is attached should be constructed of high strength materials with suitable underlying supports to accommodate the weight of the auxiliary battery module **102** for normal expected uses and potential collision impacts. The auxiliary battery module **102** may be attached to, removed from, and reattached the electric vehicle **100**, or another electric vehicle equipped to accommodate auxiliary battery modules like auxiliary battery module **102**, such as for a fleet of electric vehicles that are equipped to accommodate such auxiliary battery modules **102**.

[0023] According to an example, as shown in FIG. **1**C, and as will be discussed in further detail below, the auxiliary battery module **102** includes an integrated cooling system for cooling the auxiliary battery module **102** during operation of the vehicle, wherein the integrated cooling system comprises a first conduit portion **140** within the auxiliary battery **102** for circulating coolant within the auxiliary battery module **102**. The first conduit portion **140** may wind between and among the multiple individual battery cells (not shown) of the auxiliary battery module **102**, and in this regard, the first conduit portion **140** may configured as tubing (e.g., tubing of copper alloy, aluminum alloy, steel alloy, etc.) that winds among the multiple battery cells, e.g., with windings at multiple heights. Thermal contact between the first conduit portion **140** and the battery cells may be enhanced to facilitate transfer of heat between the conduit **140** and the battery cells, e.g., by disposing any suitable thermal contact material therebetween, such as thermoplastic materials with good thermal conductivity known in the art for conducting heat from and/or to battery cells. As shown in FIGS. **1**A-**1**C, the auxiliary battery module **102** includes a first fluid connector **124** including an inlet port **124***a* and an outlet port **124***b*, and the electric vehicle **100** includes a complementary second fluid connector **126** that mates with the first fluid connector **124** and that includes a complementary inlet port **126***a* and a complementary outlet port **126***b* and to provide liquid-tight couplings that permit flow of coolant from the electric vehicle **100** into the auxiliary battery module **102** and that permits return flow of coolant from the auxiliary battery module **102** back to the electric vehicle **100**. For example, the respective inlet ports and outlet ports can be provided by suitable metal flat-face, dry-break connectors, such as illustrated by connector **150** and connector **160** shown in the example of FIG. **2**.

[0024] Conventional flat-face, dry-break connectors are a type of dry-break connector that permits fluid-flow systems to be separated with little to no loss of fluid. Such conventional flat-face, dry-break connectors include a releasable locking mechanism based on complementary locking features to lock first and second (e.g., male and female) ends together when coupled, such as 1) a retractable sleeve on one connector that forces a ring of metal bearings into a ring shaped groove on the other connector, 2) complementary threaded housings that screw together, or 3) a protrusion on one connector that rides in a groove on the other connector